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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,269	09/18/2003	Byung-Kwon Kang	5000-1-420	7114
33942	7590	11/18/2005	EXAMINER	
CHA & REITER, LLC 210 ROUTE 4 EAST STE 103 PARAMUS, NJ 07652			GOLUB, MARCIA A	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 11/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/665,269

Applicant(s)

KANG ET AL.

Examiner

Marcia A. Golub

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

The 35 USC 103 rejection over Kim et al. in view of Glance et al has been withdrawn based on applicant's amendment filed on 10/20/2005.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1 and 5 have been considered but are moot in view of the new ground(s) of rejection.

Regarding applicant's argument on page 6 (1<sup>st</sup> paragraph) that Kim discloses controlling the thermistor by alternating heating and cooling intervals, it is pointed out that Kim specifies that his invention can work in both continuous and pulsed wavelength operation (3/48-49). Therefore the quote cited by the applicant (4/4-6) is related to the pulsed wavelength operation of the invention and not to the continuous wavelength operation.

Regarding applicant's argument on page 6 (2<sup>nd</sup> paragraph) that Glance does not meet the limitations of the amended claims, the argument is accepted and the reference is withdrawn.

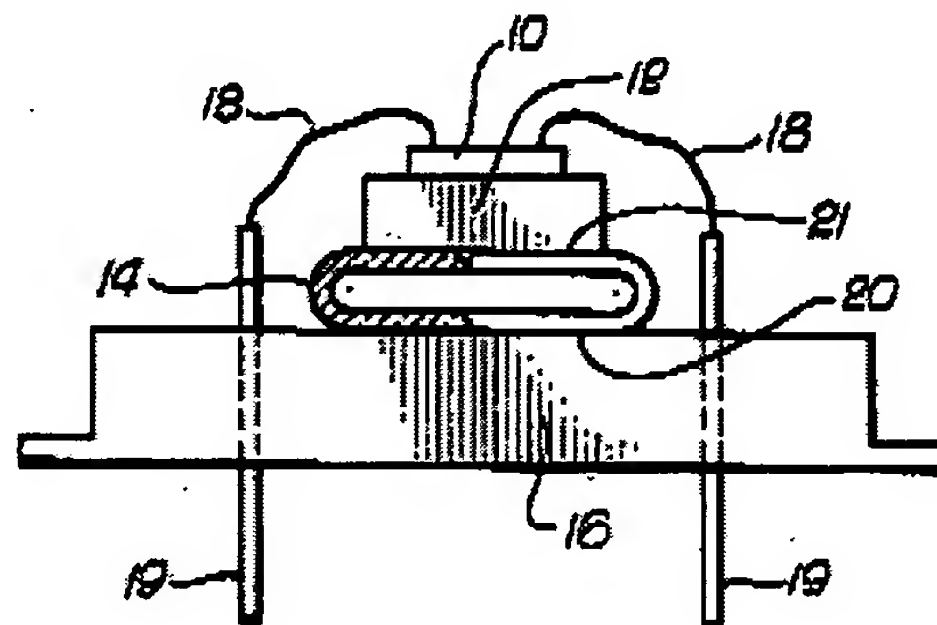
New grounds of rejection are presented below in view of new found references.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Faris (U.S. Pat 4,518,944), and further in view of Lopatinsky et al. (U.S. Pub. 20050002163).



Regarding **claim 1**, Fig 1 of Faris discloses a device for regulating the temperature of an electronic components comprising:

“a plate-shaped thermistor [12] having a positive temperature coefficient (3/22-23) so that resistance of the thermistor increases according to an increase of an environmental temperature; (1/21-22)

a driving means for applying a predetermined constant direct voltage to the thermistor and for controlling a temperature of the thermistor based on the environmental temperature.” (1/19-25)

in addition Faris discloses an electronic component [10] mounted on an upper surface of the thermistor; Faris does not disclose the electronic component to be a semiconductor chip however Lopatinsky discloses in paragraph 15 that an electronic component could be a semiconductor chip.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the invention of Lopatinsky into the device of Faris by integrating a semiconductor chip on top of a thermistor. The ordinary artisan would have been motivated to modify Faris in the manner set forth above for at least the purpose of controlling the output of the semiconductor chip, since the output properties of semiconductor chips vary with ambient temperature.

**Claims 2, 3, 5-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Faris (U.S. Pat 4,518,944), and further in view of Lopatinsky et al. (U.S. Pub. 20050002163) and Seelert et al. (U.S. Pat 5,930,600).

Regarding **claim 5**, Fig 1 of Faris and Lopatinsky disclose a device for regulating the temperature of an electronic components, as described above, in addition:

Faris discloses a constant voltage supplied to the thermistor “capable of controlling a temperature of the thermistor based on the environmental temperature” (1/19-25) but does not specify the details of the voltage driving means. However, Seelert discloses

“a plurality of electrodes [30,32], coupled to the thermistor [24], arranged to connect the thermistor to a constant direct voltage source [46].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Steelert into the device of Faris and Lopatinsky by attaching a plurality of electrodes to the thermistor, and then attaching a constant direct voltage source to the first and second electrode. The ordinary artisan would have been motivated to modify Faris and Lopatinsky in the manner set forth above for at least the purpose of providing a signal to the thermistor to ensure proper temperature control of the laser chip.

Regarding **claims 2 and 6**, Faris, Lopatinski and Steelert disclose everything claimed, as applied above, except they do not specify that the thermistor has heating characteristics defined by equation  $P = \frac{V^2}{R}$ . However, this equation is inherent to the operation of the thermistor. This equation is characteristic to the operation of any device with internal resistance and a voltage drop across it and can be found in any analog circuits textbook.

Regarding **claims 3 and 7** Faris, Lopatinsky and Steelert disclose everything claimed, as applied above, wherein the driving mean includes a first electrode [30] and a second electrode [32] laminated on both sides of the thermistor [24]; and a voltage source [46] connected to the first electrode and the second electrode, which applies a predetermined voltage.

**Claims 4 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Faris, Lopatinsky and Steelert, and further in view of Kim et al. (U.S. Pat 5,680,410)

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Regarding **claim 4 and 8**, Faris, Lopatinsky and Steelert disclose everything claimed, as applied above, except they do not disclose “the semiconductor chip to be a semiconductor laser chip capable of emitting light through one end of the semiconductor chip”. However, Fig. 1 of Kim discloses the PTC thermistor connected to a laser chip.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Kim into the device of Faris, Lopatinsky and Steelert by making the semiconductor chip to be a laser chip. The ordinary artisan would have been motivated to modify Faris, Lopatinsky and Steelert in the manner set forth above for at least the purpose of regulating the temperature of the laser component in response to the changes in the environmental temperature.

**Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Faris, Lopatinsky, Steelert and Kim, and further in view of Nagatomo et al. (U.S. Pub. 2004/0208652).

Regarding **claim 9**, Faris, Lopatinsky, Steelert and Kim disclose everything claimed as applied above, but do not disclose “the semiconductor chip to be a semiconductor optical amplifier”.

However, it is well known in the art and Nagatomo teaches in paragraph 63 that a semiconductor laser can be an amplifying medium for a semiconductor optical amplifier. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Nagatomo into the device of Faris, Lopatinsky, Steelert and Kim by specifying the semiconductor chip to be a

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semiconductor optical amplifier. The ordinary artisan would have been motivated to modify Faris, Lopatinsky, Steelert and Kim in the manner set forth above for at least the purpose of creating a light source feasible for the operation of the optical communication module.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



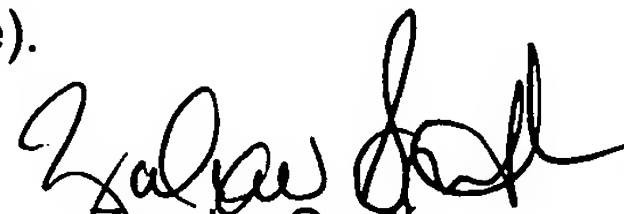
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***Fax/Telephone Info***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcia A. Golub whose telephone number is 571-272-8602. The examiner can normally be reached on M-F 9-6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Zandra Smith  
Primary Examiner

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